What is claimed is:

1. A stage assembly that holds a device, the stage assembly comprising:

a carrier including a carrier top;

a device holder that retains the device, the device holder including a holder bottom; and

a holder connector assembly that directly connects the holder bottom of the device holder to the carrier top of the carrier so that deformation of the carrier does not result in deformation of the device holder.

2. The stage assembly of claim 1 wherein the holder connector assembly includes a flexure.

3. The stage assembly of claim 2 wherein the holder connector assembly includes three spaced apart flexures.

4. The stage assembly of claim 1 wherein the holder connector assembly kinematically connects the device holder to the carrier.

5. The stage assembly of claim 1 wherein the holder connector assembly includes three spaced apart protrusions and three spaced apart receivers.

6. The stage assembly of claim 1 wherein the holder connector assembly includes a protrusion and a cone shaped receiver that receives the protrusion.

7. The stage assembly of claim 1 wherein the holder connector assembly includes a fluid bearing assembly.

8. The stage assembly of claim 7 wherein the holder connector assembly includes three spaced apart, fluid bearing assemblies.

9. The stage assembly of claim 8 wherein each fluid bearing assembly includes a bearing body having a substantially triangular shaped cross-section and a pair of bearing pads.

10. The stage assembly of claim 9 wherein the holder connector assembly includes three spaced apart receivers.

11. The stage assembly of claim 10 wherein each of the receivers includes a groove having a substantially triangular shaped cross-section.

12. The stage assembly of claim 1 further comprising a device table, and a stage mover assembly that moves the device table, wherein the carrier is coupled to the device table.

13. The stage assembly of claim 12 wherein the stage mover assembly moves the device table with at least three degrees of freedom.

14. The stage assembly of claim 1 further comprising a device table and wherein the carrier rotates relative to the device table.

15. The stage assembly of claim 14 further comprising a lock that inhibits rotation of the carrier relative to the device table.

16. The stage assembly of claim 14 wherein the carrier and the device holder are rotated relative to the device table between a first position and a second position.

17. The stage assembly of claim 16 wherein the device holder is rotated at least approximately 25 degrees between the first position and the second position.

18. The stage assembly of claim 16 wherein the device holder is rotated at least approximately 180 degrees between the first position and the second position.

19. The stage assembly of claim 1 further comprising a bearing that allows for rotation of the carrier relative to the device table.

20. The stage assembly of claim 1 further comprising a holder damper assembly that dampens vibration between the device holder and the carrier.

21. The stage assembly of claim 20 wherein the holder damper assembly includes a first damping layer that covers at least a portion of one of the carrier and the device holder.

22. The stage assembly of claim 21 wherein the first damping layer is made of a viscoelastic material.

23. The stage assembly of claim 21 further comprising a constraining layer of material that covers at least a portion of the first damping layer.

24. The stage assembly of claim 20 wherein the holder damper assembly includes a first damping layer that covers at least a portion of the device holder and a second damping layer that covers at least a portion of the carrier.

25. The stage assembly of claim 24 wherein the first damping layer and the second damping layer are made of a viscoelastic material.

26. The stage assembly of claim 24 further comprising a constraining layer of material that covers at least a portion of one of the damping layers.

27. The stage assembly of claim 20 wherein the holder damper assembly includes a magnet that is secured to the device holder, the magnet generating flux that passes through the carrier to dampen vibration of the device holder.

28. The stage assembly of claim 20 wherein the holder damper assembly includes a magnet that is secured to the carrier, the magnet generating flux that passes through the device holder to dampen vibration of the device holder.

29. The stage assembly of claim 20 wherein the holder damper assembly utilizes squeeze film type damping.

30. The stage assembly of claim 29 wherein the holder damper assembly includes a damping unit that includes a first damping component that is secured to the device holder and a second damping component that is secured to the carrier, wherein a small gap exists between the first damping component and the second damping component.

31. The stage assembly of claim 1 further comprising a holder mover that engages the carrier and rotates the carrier and the device holder.

32. An exposure apparatus including the stage assembly of claim 1.

33. A device manufactured with the exposure apparatus according to claim 32.

34. A wafer on which an image has been formed by the exposure apparatus of claim 32.

35. A stage assembly that holds a device, the stage assembly comprising:

a carrier;

a device holder that retains the device;

a holder connector assembly that connects the device holder to the carrier so that deformation of the carrier does not result in deformation of the device holder; and

a holder damper assembly connected to at least one of the device holder and the carrier, the holder damper damping vibration between the device holder and the carrier.

36. The stage assembly of claim 35 wherein the holder connector assembly includes a flexure.

37. The stage assembly of claim 36 wherein the holder connector assembly includes three spaced apart flexures.

38. The stage assembly of claim 35 wherein the holder connector assembly kinematically connects the device holder to the carrier.

39. The stage assembly of claim 35 wherein the holder connector assembly includes three spaced apart protrusions and three spaced apart receivers.

40. The stage assembly of claim 35 wherein the holder connector assembly includes a fluid bearing assembly.

41. The stage assembly of claim 40 wherein the holder connector assembly includes three spaced apart, fluid bearing assemblies.

42. The stage assembly of claim 41 wherein each fluid bearing assembly includes a bearing body having a substantially triangular shaped cross-section and a pair of bearing pads.

43. The stage assembly of claim 42 wherein the holder connector assembly includes three spaced apart receivers.

44. The stage assembly of claim 43 wherein each of the receivers includes a groove having a substantially triangular shaped cross-section.

45. The stage assembly of claim 35 further comprising a device table and wherein the carrier rotates relative to the device table.

46. The stage assembly of claim 45 further comprising a lower damper assembly for damping vibration between the carrier and the device table.

47. The stage assembly of claim 45 further comprising a stage mover assembly that moves the device table.

48. The stage assembly of claim 45 further comprising a lock that inhibits rotation of the carrier relative to the device table.

49. The stage assembly of claim 45 wherein the carrier and the device holder are rotated relative to the device table between a first position and a second position.

50. The stage assembly of claim 49 wherein the device holder is rotated at least approximately 25 degrees between the first position and the second position.

51. The stage assembly of claim 49 wherein the device holder is rotated at least approximately 180 degrees between the first position and the second position.

52. The stage assembly of claim 35 wherein the holder damper assembly includes a first damping layer that covers at least a portion of one of the carrier and the device holder.

53. The stage assembly of claim 52 wherein the first damping layer is made of a viscoelastic material.

54. The stage assembly of claim 52 further comprising a constraining layer of material that covers at least a portion of the first damping layer.

55. The stage assembly of claim 35 wherein the holder damper assembly includes a first damping layer that covers at least a portion of the device holder and a second damping layer that covers at least a portion of the carrier.

56. The stage assembly of claim 55 wherein the first damping layer and the second damping layer are made of a viscoelastic material.

57. The stage assembly of claim 56 further comprising a constraining layer of material that covers at least a portion of one of the damping layers.

58. The stage assembly of claim 35 wherein the holder damper assembly includes a damping layer that covers at least a portion of the holder connector assembly.

59. The stage assembly of claim 35 wherein the holder damper assembly includes a magnet that is secured to the device holder, the magnet generating flux that passes through the carrier to dampen vibration of the device holder.

60. The stage assembly of claim 35 wherein the holder damper assembly includes a magnet that is secured to the carrier, the magnet generating flux that passes through the device holder to dampen vibration of the device holder.

61. The stage assembly of claim 35 wherein the holder damper assembly utilizes squeeze film type damping.

62. The stage assembly of claim 61 wherein the holder damper assembly includes a damping unit that includes a first damping component that is secured to the device holder and a second damping component that is secured to the carrier, wherein a small gap exists between the first damping component and the second damping component.

63. An exposure apparatus including the stage assembly of claim 35.

64. A device manufactured with the exposure apparatus according to claim 63.

65. A wafer on which an image has been formed by the exposure apparatus of claim 63.

66. A stage assembly that holds a device, the stage assembly comprising:

a carrier;

a device holder that retains the device; and

a holder connector assembly that directly connects the device holder to the carrier, the holder connector assembly including a flexure.

67. The stage assembly of claim 66 wherein the holder connector assembly includes three spaced apart flexures.

68. The stage assembly of claim 66 wherein the holder connector assembly kinematically connects the device holder to the carrier.

69. The stage assembly of claim 66 further comprising a device table and wherein the carrier rotates relative to the device table.

70. The stage assembly of claim 69 further comprising a lock that inhibits rotation of the carrier relative to the device table.

71. The stage assembly of claim 69 wherein the carrier and the device holder are rotated relative to the device table between a first position and a second position.

72. The stage assembly of claim 71 wherein the device holder is rotated at least approximately 25 degrees between the first position and the second position.

73. The stage assembly of claim 71 wherein the device holder is rotated at least approximately 180 degrees between the first position and the second position.

74. The stage assembly of claim 66 further comprising a holder damper assembly that dampens vibration between the device holder and the carrier.

75. The stage assembly of claim 74 wherein the holder damper assembly includes a first damping layer that covers at least a portion of one of the carrier and the device holder.

76. The stage assembly of claim 75 wherein the first damping layer is made of a viscoelastic material.

77. The stage assembly of claim 75 further comprising a constraining layer of material that covers at least a portion of the first damping layer.

78. The stage assembly of claim 74 wherein the holder damper assembly includes a first damping layer that covers at least a portion of the device holder and a second damping layer that covers at least a portion of the carrier.

79. The stage assembly of claim 74 wherein the holder damper assembly includes a magnet that is secured to the device holder, the magnet generating flux that passes through the carrier to dampen vibration of the device holder.

80. The stage assembly of claim 74 wherein the holder damper assembly includes a magnet that is secured to the carrier, the magnet generating flux that passes through the device holder to dampen vibration of the device holder.

81. The stage assembly of claim 74 wherein the holder damper assembly utilizes squeeze film type damping.

82. The stage assembly of claim 66 wherein the flexure extends directly between a carrier top of the carrier and a holder bottom of the device holder.

83. An exposure apparatus including the stage assembly of claim 66.

84. A device manufactured with the exposure apparatus according to claim 83.

85. A wafer on which an image has been formed by the exposure apparatus of claim 83.

86. A stage assembly that holds a device, the stage assembly comprising:

a carrier;

a device holder that retains the device; and

a holder connector assembly that directly connects the device holder to the carrier, the holder connector assembly including a fluid bearing.

87. The stage assembly of claim 86 wherein the holder connector assembly kinematically connects the device holder to the carrier.

88. The stage assembly of claim 86 wherein the holder connector assembly includes three spaced apart, fluid bearing assemblies.

89. The stage assembly of claim 88 wherein each fluid bearing assembly includes a bearing body having a substantially triangular shaped cross-section and a pair of bearing pads.

90. The stage assembly of claim 89 wherein the holder connector assembly includes three spaced apart receivers for receiving each bearing body.

91. The stage assembly of claim 90 wherein each of the receivers includes a groove having a substantially triangular shaped cross-section.

92. The stage assembly of claim 86 further comprising a device table and wherein the carrier rotates relative to the device table.

93. The stage assembly of claim 92 further comprising a lock that inhibits rotation of the carrier relative to the device table.

94. The stage assembly of claim 92 wherein the carrier and the device holder are rotated relative to the device table between a first position and a second position.

95. The stage assembly of claim 94 wherein the device holder is rotated at least approximately 25 degrees between the first position and the second position.

96. The stage assembly of claim 94 wherein the device holder is rotated at least approximately 180 degrees between the first position and the second position.

97. The stage assembly of claim 86 further comprising a holder damper assembly that dampens vibration between the device holder and the carrier.

98. The stage assembly of claim 97 wherein the holder damper assembly includes a first damping layer that covers at least a portion of one of the carrier and the device holder.

99. The stage assembly of claim 97 wherein the holder damper assembly includes a first damping layer that covers at least a portion of the device holder and a second damping layer that covers at least a portion of the carrier.

100. The stage assembly of claim 97 wherein the holder damper assembly includes a magnet that is secured to the device holder, the magnet generating flux that passes through the carrier to dampen vibration of the device holder.

101. The stage assembly of claim 97 wherein the holder damper assembly includes a magnet that is secured to the carrier, the magnet generating flux that passes through the device holder to dampen vibration of the device holder.

102. The stage assembly of claim 97 wherein the holder damper assembly utilizes squeeze film type damping.

103. An exposure apparatus including the stage assembly of claim 86.

104. A device manufactured with the exposure apparatus according to claim 103.

105. A wafer on which an image has been formed by the exposure apparatus of claim 103.

106. A method for making a stage assembly that holds a device, the method comprising the steps of:

providing a device table that is supported movably;

connecting a carrier to the device table; and

connecting a device holder that retains the device to the carrier so that deformation of the carrier does not result in deformation of the device holder.

107. The method of claim 106, wherein the step of connecting the device holder includes the step of securing the device holder to the carrier with a flexure.

108. The method of claim 106, wherein the step of connecting the device holder includes the step of kinematically securing the device holder to the carrier.

109. The method of claim 107, wherein the flexure extends between the device holder and the carrier.

110. The method of claim 106 wherein the step of connecting the device holder includes the step of creating a fluid bearing between the device holder and the carrier.

111. The method of claim 110 wherein the step of connecting the device holder includes the step of providing three spaced apart, fluid bearing assemblies, each fluid bearing assembly including a bearing body having a substantially triangular shaped cross-section and a pair of bearing pads.

112. The method of claim 111 wherein the step of connecting the device holder includes the step of providing three spaced apart receivers for receiving each bearing body, each of the receivers includes a groove having a substantially triangular shaped cross-section.

113. The method of claim 106, further comprising the step of connecting a stage mover assembly to the device table.

114. The method of claim 106 wherein the step of connecting a carrier includes the step of supporting the carrier above the device table with a bearing that allows for rotation of the carrier relative to the device table.

115. The method of claim 114, wherein the rotation of the carrier is inhibited selectively relative to the device table.

116. The method of claim 106, further comprising the step of connecting a holder damper assembly to at least one of the device holder and the carrier to dampen vibration between the device holder and the carrier.

117. The method of claim 106, further comprising the step of covering at least a portion of one of the carrier and the device holder with a first damping layer to dampen vibration between the device holder and the carrier.

118. The method of claim 106, further comprising the step of securing a magnet to at least one of the device holder and the carrier to dampen vibration between the device holder and the carrier.

119. The method of claim 116, wherein the holder damper assembly includes squeeze film type damping.

120. A method for making an exposure apparatus that forms an image on an object, the method comprising the steps of:

providing an irradiation apparatus that irradiates the object with radiation to form image on the object; and

providing the stage assembly made by the method of claim 106.

121. A method of making a wafer utilizing the exposure apparatus made by the method of claim 120.

122. A method of making a device including at least the exposure process: wherein the exposure process utilizes the exposure apparatus made by the method of claim 120.

123. A stage assembly that holds a device, the stage assembly comprising:

a device table;a device holder that retains the device, the device holder being coupled to the device table; and

a holder damper assembly for damping vibration between the device holder and the device table.

124. The stage assembly of claim 123 wherein the holder damper assembly is connected to at least one of the device holder and the device table.

125. The stage assembly of claim 123 further comprising a rotation assembly that couples the device holder to the device table, the rotation assembly allowing for rotation of the device holder relative to the device table.

126. The stage assembly of claim 123 wherein the device holder rotates relative to the device table.

127. The stage assembly of claim 123 further comprising a stage mover assembly that moves the device table.

128. The stage assembly of claim 123 further comprising a lock that inhibits rotation of the device holder relative to the device table.

129. The stage assembly of claim 123 wherein the device holder rotates relative to the device table between a first position and a second position.

130. The stage assembly of claim 129 wherein the device holder rotates at least approximately 25 degrees between the first position and the second position.

131. The stage assembly of claim 123 wherein the holder damper assembly includes a first damping layer that covers at least a portion of one of the device table and the device holder.

132. The stage assembly of claim 131 wherein the first damping layer is made of a viscoelastic material.

133. The stage assembly of claim 131 further comprising a constraining layer of material that covers at least a portion of the first damping layer.

134. The stage assembly of claim 123 wherein the holder damper assembly includes a first damping layer that covers at least a portion of the device holder and a second damping layer that covers at least a portion of the device table.

135. The stage assembly of claim 134 wherein the first damping layer and the second damping layer are made of a viscoelastic material.

136. The stage assembly of claim 134 further comprising a constraining layer of material that covers at least a portion of one of the damping layers.

137. The stage assembly of claim 123 wherein the holder damper assembly includes a magnet that is secured to the device holder, the magnet generating flux that passes through the device table to dampen vibration of the device holder.

138. The stage assembly of claim 123 wherein the holder damper assembly includes a magnet that is secured to the device table, the magnet generating flux that passes through the device holder to dampen vibration of the device holder.

139. The stage assembly of claim 123 wherein the holder damper assembly utilizes squeeze film type damping.

140. The stage assembly of claim 139 wherein the holder damper assembly includes a damping unit that includes a first damping component that is secured to the device holder and a second damping component that is secured to the device table, wherein a small gap exists between the first damping component and the second damping component.

141. The stage assembly of claim 123 further comprising a carrier that couples the device holder to the device table.

142. The stage assembly of claim 123 wherein the holder damper assembly is connected to at least one of the device holder, the carrier and the device table.

143. An exposure apparatus including the stage assembly of claim 123.

144. A device manufactured with the exposure apparatus according to claim 143.

145. A wafer on which an image has been formed by the exposure apparatus of claim 143.